U.S. ARMY COMMAND AND GENERAL STAFF COLLEGE

FORT LEAVENWORTH, KANSAS

(2)

Abstracts Of Master Of Military Art And Science (MMAS) Theses And Special Studies 1978-1979 Annual Edition

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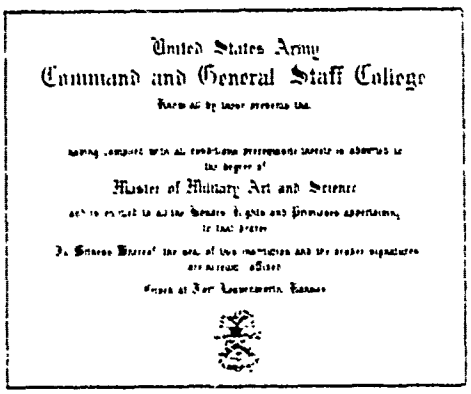
United States Army
Command and General Staff College

Master of Military Art and Science

THE DEGREE
MASTER OF MILITARY ART AND SCIENCE

On 5 August 1974 legislation was enacted authorizing CGSC to award the degree, Master of Military Art and Science (MMAS), an authority originally requested in 1954. The legislation prescribes that the MMAS program require a thesis; also, that the College must attain affiliate or member status with the North Central Association of Colleges and Schools prior to the award of any degree. Included in the statute was authority for retroactive awards to the 181 officers who had successfully completed the MMAS requirements in previous years. On 31 March 1976 the College was granted full accreditation as a masters' degree-granting institution by the North Central Association of Colleges and Schools.

The establishment of a formal degree granting program with the full approval of the civilian higher education community represents signal recognition for the quality of military education in general and for CGSC in particular. The degree implicitly testifies that the military profession has its own scholastic discipline, Military Art and Science; and, that insofar as the Army-in-the-field is concerned, CGSC is the source of this discipline. For those receiving degrees, the award constitutes a badge of military scholarship and is a deserving recognition for successful completion of a rigorous program. The College is proud to be the only institution to award this graduate professional degree.

FOR THE COMMANDANT:

Gerald J. Carlson

GERALD J. CARLSON
Colonel, Infantry
Assistant Deputy Commandant

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HOW TO USE THIS BOOK

This edition brings together all abstracts of Master of Military Art and Science (MMAS) theses completed at CGSC from 1978-1979. The subject section is designed to fit the areas of research emphasized by the MMAS student. Because of the primarily military thrust of the subject matter, headings such as "U.S. Army," "War," or "Combat" have been omitted in favor of more precise captions.

Some titles have been listed in several places in the subject section, as appropriate. The numbers following the subject heading correspond to the titles in the list of theses, by year of completion. Abstracts and the number of pages in the theses are found in the body of the volume.

Copies of theses written after 1975 have been placed on file in the Defense Technical Information Center (DTIC) and are available for public use. DTIC accession numbers for these theses have been included. Use DTIC Form 1 to request theses from the following address:

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Alexandria, VA 22314

Additionally, copies of every thesis are on file in the CGSC Library and may be obtained through interlibrary loan channels. Copies may be reproduced by the borrowing agency.

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The opinions and conclusions expressed in the enclosed abstracts are those of the authors and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other Government agency.

An author list is in the back of the volume.

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ABSTRACTS

325. THE NEW ENGLAND COLONIAL MILITIA AND ITS ENGLISH HERITAGE: 1620-1675, by Major Martin W. Andresen, USA, 95 pages.

The threefold purpose of this thesis is to examine the evolution of the Plymouth and Massachusetts Bay militias in relationship to the English militia; to trace their establishment in colonial law; and to describe how a changing New World environment altered the colonial militias during the period 1620-1675.

Research indicates that the New England colonial militias did bear an outward resemblance to the English militia. Both institutions were established on the principle, enforced by law, that every adult male had an inherent obligation to protect and defend his country and its government. Included in that obligation was the requirement to maintain and bear arms at one's own expense. However, while there were similarities between the two militia systems, the resemblance was more apparent than real. While the English militia rapidly declined in importance during the seventeenth century, the New England militias remained the cornerstone of the colonial military establishments until the American Revolutionary War. Another important difference between the two institutions pertained to control of the militia. In England the Crown controlled the militia through its royal prerogative. In New England control of the militias rested in the legislative bodies. In these and other essential characteristics, the New England colonial militias evolved differently from their English counterpart.

326. IS TACTICAL AIR SUPPORT OF AN AIRBORNE BATTALION FEASIBLE IN ADVERSE WEATHER?, by Major Howard D. Barnard, III, USAF, 64 pages.

This study attempts to determine if tactical air support of an airborne battalion is feasible in adverse weather. The investigation is focused on an analysis of close air support, reconnaissance, and aerial resupply.

Investigation reveals that the Air Force is capable of providing tactical reconnaissance and aerial resupply in adverse weather. Further examination reveals that the Air Force is only capable of very limited close air support in adverse weather. Hence, at the present time, tactical air support of an airborne battalion in adverse weather is not feasible.

327. FALSE ARREST OF DESERTERS: AN ANALYSIS OF IMMUNITY FROM FEDERAL CIVIL LIABILITY, by Major John R. Bozeman, USA, 107 pages.

This study discusses false arrest as a basis for liability in civil suits brought on the federal level, and examines the nature and scope of immunity available to protect state and local law enforcement officials, and their employers, from liability for false arrest in connection with deserter apprehension cases. The development of immunity doctrine in the decisions of the United States Supreme Court is analyzed together with trends identified in decisions of the lower federal courts as they have attempted to interpret the Supreme Court's guidelines. Conclusions drawn from these analyses are applied to issues presented by deserter apprehensions pursuant to 10 U.S.C. §808.

The discussion develops the principal considerations which may affect liability in three federal civil damage remedies for false arrest: 42 U.S.C. S1983, the Fourth Amendment of the Constitution, and the Federal Tort Claims Act. The varying requirements for each remedy are analyzed by reference to potential defendants: police officers, their supervisors, municipalities, states, and the federal government.

The examination reveals that, despite a broad spectrum of civil damage remedies, each potential defendant is afforded substantial protection from liability owing to the immunity doctrines enunciated by the federal courts. Particular attention is given to the good faith defense which is available to protect police officers, their supervisors and employers from federal civil liability.

328. A QUANTITATIVE ANALYSIS OF HANDGUN USE DURING THE EVASION AND SURVIVAL ATTEMPTS OF ARMY AIR FORCE AIRCREW MEMBERS DURING WORLD WAR II, by Major Joseph R. Bream, US Air Force, 96 pages.

This study establishes desirable characteristics of handguns for use during evasion and survival attempts of aircrew members downed in hostile territory. Based on a quantitative analysis of data from World War II evasion reports of U.S. Army Air Force personnel, the investigation revealed that the primary value of a handgun is affording a psychological sense of security. The weapon can also be used for self-defense, killing small game for food, signaling, and coercion. Recommendations are that effective handguns and ammunition should: be light enough for the aircrew members to carry for long periods of time; be securely attached to the evadee so that they will not be lost during bailout or some other activity where recovery would not be possible; be capable of rapid employment; be very accurate; be capable of disabling an opponent with the first shot; be silent so when employed they will not attract the attention of enemy forces or hostile civilians; be capable of killing small game without destroying the meat. Further, training should also include firing at small moving targets to increase the aircrew member's accuracy.

329. THE IMPACT OF THE ALL-VOLUNTEER FORCE ON PHYSICIAN PROCUREMENT AND RETENTION IN THE ARMY MEDICAL DEPARTMENT, 1973-1978, by Major Paul P. Brooke, Jr., USA, 133 pages.

This study analyzes the planning which occurred and the provisions of the major personnel procurement programs which were established to recruit and retain physicians in the All-Volunteer Army. The investigation is focused on an evaluation of the effectiveness of these procurement programs during the period 1973-1978 and an analysis of the reasons for program performance during the period studied. An assessment of the ability of the All-Volunteer Army to attract and retain sufficient physicians to accomplish its mission is offered.

Primary research methodology consists of an extensive review of Congressional testimony concerning the thesis topic during the period 1972 through 1978, and a comparison of this testimony over a period of time. A review of pertinent military and civilian literature is provided. The research reveals that during its first five years of existence, the all-volunteer force experiment has had a seriously negative impact on Army medical officer procurement. Fundamental flaws in military physician procurement and retention programs, compounded by inconsistent as well as poorly-timed efforts to remedy them have significantly hindered optimum program effectiveness. In the zero-draft environment, the Army Medical Department has not been able to attract or retain sufficient medical officers in the active and reserve components to maintain the readiness posture required by its primary mission to support combat operations or to provide the health care expected by its eligible beneficiaries. The investigation concludes that major adjustments must be made to existing physician procurement programs in order to enable achievement of an adequate and self-sustaining force of medical officers in the 1980's. Specific recommendations are offered.

330. TACTICS OF THE SOVIET ARMY REGIMENT, by Bruce Conroy, Major, USA, 143 pages.

This research project is designed to facilitate an understanding of Soviet tactics at the regimental level and below and to draw attention to material available for additional study of Soviet tactics. This paper is the result of analyzing numerous primary and secondary sources to ascertain which forms of tactics the Soviets use and which forms we, as US authors, say they use. A review of recent Soviet tactical exercises was used to confirm their implementation of espoused tactical doctrine.

The meeting engagement, the offense, the defense, and the withdrawal are the forms of tactics. A chapter is devoted to each form and possible implementation under given circumstances is postulated. Organization for combat and necessary support elements are included to serve as an aid to wargamers.

331. ACCEPTABLE PHYSICAL STANDARDS FOR SATISFACTORY PERFORMANCE IN THE 12B ENGINEER MILITARY OCCUPATIONAL SPECIALITY, by Major Ronald A. Dabbieri, CE, USA.

This study attempts to determine what is the acceptable standard of body strength, physical stamina, endurance, and physical fitness required for satisfactory performance in the 12B Engineer Military Occupational Speciality. The investigation examines current regulatory standards, and analyzes tasks required by the 12B Soldier's Manual and Engineer ARTEP. Additionally, a survey was conducted to gather subjective data from experienced Engineer officers.

Investigation reveals that current standards are ambiguous and inadequate. Further examination indicates that quantifiable standards can be developed so that individuals could be tested and determined to be physically qualified prior to award of the 12B MOS or assignment to 12B positions.

332. THE HEAVY ANTITANK COMPANY, by Major Michael V. Harper, USA, 126 pages.

This thesis assesses the effectiveness of the current and alternative organizational structures for the employment of the TOW ATGM. Four alternatives are considered in comparison to the current organization which was assessed as a base case. The alternatives are divisional TOW Battalions, mechanized battalion TOW companies, TOW companies in both the mechanized and tank battalions. Analysis drew on historical data and the results of related work in a subjective assessment of the alternatives based on concentration, command and control, balance, supportability, training, and cost. The scope of the thesis was limited to consider the time from the present until the mid-1980's, and an assumption constrained the alternatives to adhere approximately to the current divisional end strength in equipment and people.

Overall, virtually all of the alternatives except the TOW company in the mechanized battalion only were found to be better than the current organization. Optimum TOW potential, however, is achieved when TOWs are organized into companies organic to both the mechanized and tank battalions.

333. LIGHTWEIGHT PILOT HELMETS: THE ISSUE OF WEIGHT VERSUS PROTECTION, by Major Richard W. Himmel, USAF, 60 pages.

This study addresses the problem of reducing the weight of pilot helmets while retaining relevant protective qualities. Existing helmet development standards are synthesized and compared in light of compatibility, objectivity and standardization. The issue of decreased protection, as a result of weight reduction, is discussed in view of pilot opinion, accident experience, contemporary research and recent compromises in helmet development.

The investigation reveals distinct ambiguities in helmet development standards and incongruities between standards. The study recommends the deletion of penetration standards since they are incompatible with impact standards and prevent industry from using new materials to achieve light weight. Further, the study proposes a change to military specification MIL-H-83147 (USAF) that reflects the deletion of penetration standards and recognizes current technological developments.

334. FORWARD AIR CONTROL TODAY: WILL IT WORK IN EUROPE?, by Major David A. Hooyer, USAF, 47 pages.

The problem addressed in this thesis is whether the forward air control portion of the Tactical Air Control System (TACS) can be a viable force in a projected NATO-Warsaw Pact conflict given existing equipment and manning.

Areas addressed included the present TACS structure and manning, current FA vehicles, enemy threat vulnerabilities, new techniques and tactics, communications jamming, crew training and equipment utilization. Consideration was given to the Final Report of the 1978 world-wide FAC conference recommendations.

Conclusions drawn from the research sources were:

1. The threat is not insurmountable. Proper training and tactics application can provide a survival environment for the fixed wing FAC.

2. Although aging and no longer state-of-the-art, present equipment, properly utilized, can be satisfactory to do the job.

3. Present manning can be adequate if certain restructuring of personnel is implemented. Proper management of limited resources can fill the requirements with minimum impact on other operations.

4. Improved knowledge of all team members jobs and capabilities by other members, coupled with a hand-held computer system can enhance target identification, designation and strike to a very acceptable level.

The total integration of an effective forward air control system hinges on the understanding of the problems involved and willingness by all concerned to become flexible and innovative in the efficient use of existing equipment and personnel. Cooperation among units of the USAF and between USAF and US Army units will give the only workable solution to this problem.

335. THE F-16 WILD WEASEL: A FEASIBILITY STUDY, by Major Byron L. Huff, USAF, 55 pages.

This study addresses the role of the surface-to-air missile as it was used in a coordinated air defense system in North Vietnam and in the October '73 conflict in Israel and establishes the concept of the Wild Weasel as viable in modern warfare. It covers the Soviet air defense threat as it now stands and future trends of increasing size and capability.

A history of the evolution of the Wild Weasel mission culminates with a description of the present capabilities and limitations of the F-4G Phantom Wild Weasel. General Dynamics' proposed Wild Weasel version of the F-16 is studied to cover its aerodynamic and electronic advances. A comparison of the F-4G and F-16 Wild Weasel aircraft is made to include a typical mission, range, ordnance load, and survivability. Compatibility of each aircraft operating with today's fighter force is compared with future operations of new generation aircraft of the near future.

The general conclusion is that the F-16 Wild Weasel is a quantum jump in maneuverability, survivability, and maintainability. It provides realism to the future of the Wild Weasel mission. Cost is the only area in which the F-4G excels, but this factor is slight and is offset by lower operating and maintenance costs of the F-16 and the fact that exorbitant costs will have to be incurred to update the F-4G to be capable of suppressing the Soviet threat of the near future. In order to maintain the Wild Weasel concept viability, procurement of the F-16 Wild Weasel must be started immediately.

336. THE AERIAL FIRE SUPPORT TEAM, by Major Jim S. Hutchinson, USA, 118 pages.

This study is a conceptual paper which addresses the advantages of simultaneously employing multiple types of fire support means to include field artillery, close air support, and attack helicopters against an armored threat. It examines advances in weapon systems that will be available by 1985 and their employment in the concept. The Aerial Fire Support Team (AFIST) is based upon the fundamental of the combined arms team but with emphasis on fire support. Its purpose is to increase the overall effectiveness of fire support to the maneuver commander. It works on the principle of centralized control and decentralized execution. This is accomplished by the introduction of an aerial fire support coordination center (AFISC) whose primary purpose is to control and coordinate all fire support assets to include attack helicopters. The center's design has it manned and equipped to accomplish its control and coordination mission from one aircraft. The center's usage is similar to that of the Air Force's air warning and control system (AWAGS) but with the AFISC operating well forward and at tree-top level.

Most of the techniques used in the study to facilitate control and coordination already exist in Army and Air Force tactical doctrine but have been modified to accommodate the AFIST concept. In the last chapter, brief offensive and defensive scenarios are used to demonstrate the employment of the AFIST. The purpose of the study is to examine the AFIST concept as it pertains to the overall fire support optimization. The recommendation is that it should be further evaluated by computer simulations and field exercise.

337. AN ANALYSIS OF THE SUPPORT CAPABILITIES OF THE FORWARD DEPLOYED CORPS, by Major Gerald K. Johnson, USA, 140 pages.

This study, through use of model corps, attempts to analyze the capability of the forward deployed corps to sustain itself in combat the first 5 days of a "come as you are" war in Europe. The analysis is performed in the assumed environment of the anticipated OPFOR capabilities and tactics, the United States "active defense" response, and the logistics requirements generated by that response. It attempts to determine: if the COSCOM, formulated under the "austere support" principle, is adequate to support the corps until augmentation can be effected; if the combat service support structure detracts from the corps' combat power; and what changes in the COSCOMs employment can be made to improve combat service support.

The analysis indicates an organic transportation capability far less than that required which impacts on support available throughout the logistics services spectrum. Further, support plans presently in effect assume host nation support will provide logistics sufficiency. These assumptions are made although formal agreements have not been concluded, legislative difficulties exist, and requirements have not been quantified.

Recommendations of the analysis include quantifications of host nation support requirements, a reorganization of the COSCOM battalions and further, more detailed analysis in several logistics areas.

338. THE PERSONNEL MANAGEMENT MODEL, by Major Richard E. Jonas, USA, 39 pages.

In the field of military personnel management, there is a need for an improved computerized model as a method of controlling personnel turnover. Such a model should provide the following:

1. Display gain/loss data and a monthly accounting of manning;

2. Show worst case projected manning levels;

3. Describe turnover in meaningful terms; and, most importantly,

4. Predict the impact of personnel turnover on combat readiness.

In civilian enterprises, the personnel management community takes cognizance of many turnover considerations: morale, stability, cost, and organizational effectiveness, to name a few. However, little work appears to have been done in constructing and computerizing predictive mathematical models capable of presenting a clear picture of turnover and its effect.

The military services, on the other hand, have studied the use of models for some time now. They have made some progress toward a model which meets the criteria specified above, although much remains to be improved in today's models. The Air Force has made significant progress in this regard.

This thesis articulates the necessity of turnover control, reviews what personnel managers have done up to now in computerized manning and turnover models, and proposes a Personnel Management Model which provides the features discussed above.

339. THE U.S. ARMY, PUBLIC OPINION AND PRESIDENT GRANT'S INDIAN PEACE POLICY, by Lieutenant Colonel Robert C. Key, USA, 117 pages.

This thesis describes the evolution of United States Indian policy with emphasis on the effects of public opinion during the Grant administration from 1869 to 1876. It begins with a brief description of Indian affairs from 1825 to 1867 followed by a detailed analysis of Indian policy and public opinion for each year from 1868 to 1876. Indian policy documents, reports of military operations, and newspaper reports are examined to determine the cause and effect relationships of the historical events portrayed.

Much of the research for this thesis was effected through the assistance of the interlibrary loan of microfilm copies of major newspapers across the nation. It was assumed that the contents of these newspapers reflected or formed public opinion. Newspapers were compared with reports from government agencies, such as the War Department and the Department of the Interior, to ascertain the divergent views known to exist during the period.

It is concluded from this study that public opinion was generally divided into four divergent views: the Eastern humanitarian, the Western pragmatist, the military and the general puclis; and that the American public had strong influences on the formulation of Indian policy. Specifically:

1. Contemporary public opinion rather than later historical analysis determined whether military actions against the Indians were considered heroic events or massacres.

2. The public supported the removal of the Indians from the path of westward expansion at all costs throughout the period.

3. Politically potent humanitarian groups, collectively known as the "Indian Ring," controlled the making of Indian policy from 1869 to 1873.

4. Public opinion supported the humanitarian approach as exemplified by the Grant Peace Policy until 1873 when it became generally accepted that the use of military force as a tool of the peace effort was necessary.

340. PROBABILITY WEATHER FORECASTS: FOR THE ARMY?, by Major Arthur C. Kyle, USAF, 106 pages.

The United States Army presently receives weather forecasts expressed in categorical terms. However, this forecast form limits the useful information that can be communicated to the decision maker. This study investigates the utility of replacing categorical forecasts with probability forecasts in order to enhance decision making by Army commanders. To this end, the advantages and limitations of probability forecasts are reviewed. The principal conclusion of this study is that Army commanders would benefit from receiving probability weather forecasts. Finally, several recommendations for smoothing the conversion are given and a briefing that a Staff Weather Officer can use as a basis for showing an Army commander the utility of probability forecasts is provided.

341. F-4 PHANTOM AIRCREW SURVIVAL EQUIPMENT EVALUATION, by Major William E. Lindsay, USAF, 111 pages.

The F-4 Phantom aircraft is equipped with an ejection seat which has space provided in a seat kit for the carriage of aircrew survival equipment. This study evaluates the utilization of this space and the equipment available for inclusion in the kit.

The space is not being filled with appropriate equipment in many instances because the required density of the packed kit is too great, requiring local units to pack lead shot instead of survival equipment.

The survival equipment available to the aircrew in the seat kit is generally of good quality and sound theoretical design. However, there are many areas in which the equipment has not been redesigned to use current technology and thus provide more and better equipment in a smaller space.

Additionally, the average survival kit lacks the cold weather survival protective equipment required to sustain the downed aircrew member.

This study contains specific recommendations for equipment redesign and selection for the F-4 survival seat pack.

342. HOW TO IMPLEMENT RETO (A REVIEW OF EDUCATION AND TRAINING FOR OFFICERS) AT THE US ARMY COMMAND AND GENERAL STAFF COLLEGE, by Major William B. Mack, USAF, 38 pages.

The purpose of this paper is to recommend a method to implement RETO. This method entails an Army managed, contractor assisted, application of Instructional System Development concepts and principles to solve the problem of curriculum management. The paper includes a detailed Statement of Work which specifies the contractor deliverable items by phase. The Statement of Work is a stand-alone document which can be extracted from this paper and used as necessary by Army program managers.

The paper recommends contractor assistance rather than an in-house effort because: (1) While the necessary array of resources required by this effort exists within the Army, it is doubtful that the Army could or would commit those resources to this system in the required quantity and quality at the right time; (2) A contractor provides continuity, flexibility, and credibility; (3) Since certain system components are purchased, there is a reduced liklihood that the system would be subverted through whimsical decisions, intuition, or trial and error.

343. THE ALL VOLUNTEER ARMY: IMPACT ON READINESS, by Major John William May, USA, 78 pages.

This study attempts to determine if the All Volunteer Army has had any impact on readiness and, if adverse, the extent of the impact. The investigation examines the origins of the All Volunteer Army, who serves, readiness with regard to Total Army and personnel, and the impact on mobilization and morale.

The All Volunteer Army has had an adverse impact on readiness in the areas of mobilization and morale. The situation appears unlikely to improve unless reserve force strengths improve.

344. THE SUPPRESSION OF ENEMY AIR DEFENSE WITHIN TWENTY KILOMETERS OF THE FORWARD EDGE OF THE BATTLE AREA, by Major Charles L. McCoy, USAF, 121 pages.

This study attempts to determine if joint electronic warfare can be employed to suppress enemy air defenses within twenty kilometers of the forward edge of the battle area. The investigation is focused on an analysis of why joint electronic warfare is needed to suppress enemy air defenses.

The investigation reveals that the quantity and diversity of Soviet ground air defense systems have increased to the point that close air support will be ineffective without augmented electronic warfare support. Since Air Force electronic warfare support assets are limited, an alternate source must be sought for this capability. Within 20 kilometers of the forward edge of the battle area, Army EW could possibly provide this support. However, more work is required on the part of the Army and Air Force to make joint EW an effective means of suppressing enemy air defenses.

345. ROLES AND MISSIONS OF AIRBORNE, RANGER, AND SPECIAL FORCES IN CONTINGENCY OPERATIONS, by Major Charles D. McMillin, USA, 108 pages.

This thesis addresses the roles and missions of U.S. Army airborne, ranger, and special forces in rapid reaction contingency operations. The study focuses on the requirements for and the missions appropriate for each of these elite units within the context of the more likely "half war" contingency of the nation's "one-and-a-half war" strategy. Specifically examined are historial perspectives, current organization, mission, and capabilities, as well as deployment and employment concepts.

346. THE U.S. ARMY SCHOOL OF THE AMERICAS AND ITS IMPACT ON UNITED STATES-LATIN AMERICA MILITARY RELATIONS, by Major Milton R. Menjivar, USA, 63 pages.

This study attempts to determine if there is a need for a school to specifically train Latin American military personnel in selected tactical and technical areas. It also examines the options of an institution that would meet specific Latin American training requirements as well as military and political objectives of the United States.

Research revealed that American military influence in Latin America is rapidly decreasing and that Latin America is capable of conducting military training in support of its own needs. The primary advantage of operating the United States Army School of the Americas would be the access to Latin American military personnel and the resulting degree of influence. The United States must evaluate its policies and objectives in Latin America and decide if it is willing to fund such an institution.

347. ANALYSIS OF USAF CLOSE AIR SUPPORT TRAINING, by Major William C. Oberlin, USAF, 100 pages.

This study first examines the postulated characteristics of the modern battlefield and then proposes several close air support skill and knowledge requirements based upon the expected battlefield characteristics. The study next investigates the training requirements established in the current USAF close air support training program, TACM 51-50.

A comparison between the close air support battlefield requirements and the current program reveals a lack of emphasis on joint training. The study also highlights several factors inhibiting unit accomplishment of the training programs. Mitigation of these factors is possible through centralized management of training program execution. Currently existing supervisory agencies are capable of assuming the execution management function.

348. HOW WILL THE UNITED STATES WITHDRAWAL FROM THE REPUBLIC OF KOREA AFFECT JAPAN'S NATIONAL SECURITY?, by Major Bowman M. Olds, USA, 118 pages.

This study examines the impact of the United States ground troop withdrawal from the Republic of Korea on Japan's national security. Japan's vital interests, her Self-Defense Force, and the status of the United States-Japan security treaty provide a basis for analyzing her current national security program.

The effect of the withdrawal is weighed against America's changing role in Asia and Japan's perception of the threat in East Asia. Based upon the Japanese assessment of these developments, six major options have been examined as choices for Japan as she responds to the changes in this region.

In the final analysis, it is anticipated that the United States withdrawal of ground troops in the short-term will not be significant. As long as the United States-Japan security treaty is credible and continues to serve as the cornerstone in this relationship, Japan's national security structure will remain relatively unchanged. In the long-term, however, it is probable that Japan will take precautionary steps to obviate the outbreak of hostilities. In the event of another armed conflict on the Korean peninsula, the most likely option for Japan will be a selective and conventional course of rearmament involving the continuation of her incremental advances and improvements in her current force structure.

349. PROTECTING MILITARY PERSONNEL AND THE PUBLIC FROM THE HAZARDS OF ELECTROMAGNETIC RADIATION FROM MILITARY COMMUNICATIONS AND RADAR SYSTEMS, by Major Stephen A. Oliva, USA, 114 pages.

This study has as its objective the improvement of the protection provided by the military services to military personnel and members of the general public from the hazards of electromagnetic radiation (EMR) of military communications and radar systems. The focus of the investigation is on the area of the electromagnetic spectrum from 30 Hz to 300 Gegahertz.

As part of the investigation, the nature of EMR with respect to its interaction with biological matter is reviewed, and the extent of the hazard created by EMR at various frequencies is examined. The extent of military involvement with systems that emit EMR and with research into the hazards of EMR is detailed.

An analysis of the military services protective measures, both physical and administrative, is made.

Investigation reveals that there are several areas in which the individual services could improve their protective measures by adopting measures in use in other services.

Recommendations as to corrective measures are suggested.

350. SPAIN AND THE DEFENSE OF EUROPE: A GEOPOLITICAL PERSPECTIVE, by Major Leandro Penas, Spain, 110 pages.

This study attempts to establish the strategic importance and value of Spain in relation to the defense of Europe. The research has been done through four different approaches consisting of analyzing successively: the position of Spain in the light of the main geopolitical theories, the geographic features of the country, the most significant events of the Spanish history, and the possible role to be played by Spain in the current political confrontation between the East and the West.

The conclusions reached through the four different approaches confirm and point out the critical strategic importance of Spain in the European scenario and can be summarized in these statements:

-Who rules the Heartland and the Iberian Peninsula simultaneously, controls the western Rimland.

-Who rules the Heartland and the western Rimland, controls the World Island.

-Who rules the World island, controls the destiny of the World.

351. A THEORY ON TERRORIST ACTIVITY IN AMERICA AND ITS EFFECT ON THE UNITED STATES ARMY, by Major John B. Reisz, USA, 117 pages.

The purpose of this thesis is to examine those factors which may contribute to the employment of the US Army in countering terrorist activity in the United States, and the subsequent effect such an action may have on the military and civilian sectors of the society. The study is focused on an analysis of terrorist strategies and tactics, possible mass destruction weapons, and examines how a terrorist organization, operating in the United States, might gain an appreciable degree of popular support through the use of nuclear, chemical, or biological weapons. The investigation considers how a terrorist might exacerbate the situation to encourage anti-military sentiments and continue terrorist attacks against military personnel and facilities. The study also addresses the domestic legal issues pertaining to the use of military forces in the civil community; and examines international law as it relates to the question of whether or not the United States may be required to extend prisoner of war status to captured terrorist personnel.

The study concludes that a terrorist organization may employ a nuclear weapon in a manner designed to shift responsibility for the act to the nuclear power industry, and then attempt to provoke committed military forces into over-reacting and to anti-nuclear demonstrations. A recommendation is made to upgrade military training and awareness in the area of terrorist strategies designed to prompt military forces to act beyond the scope of their authority and purpose.

352. RADAR DETECTION MODELS IN COMPUTER SUPPORTED NAVAL WAR GAMES, by Lieutenant Commander Francis C. Riley, Jr., USN, 104 pages.

The purpose of this paper was threefold. First to introduce basic pulse modulated radar theory while concurrently identifying those analytically descriptive parameters and environmental factors which should be considered in realistic radar detection models; second, to evaluate the adequacy of the radar detection models found in current and planned computerized naval war games with tactical applications; and finally, if satisfactory radar detection models did not exist in those games, then to suggest a suitable model.

Each of the paper's three research objectives was achieved. Since none of the radar detection models satisfactorily addressed radar radiation patterns a model was proposed based on a software package developed at the Naval Research Laboratory. In addition, during the course of the research for this paper a requirement for the effective centralized management of computer supported war games development in the U.S. Navy was perceived.

353. EMPLOYMENT OF AIRBORNE AIR CAVALRY IN THE AIRBORNE ANTIARMOR DEFENSE, by Major Theodore T. Sendak, USA, 98 pages.

This study attempts to determine the most viable employment techniques and tactics that the air cavalry squadron (airborne) can use in the conduct of the airborne antiarmor defense. The investigation is focused on a general analysis of the airborne antiarmor defense, the threat facing the cavalry squadron and how these combine to allow the cavalry to survive and accomplish their mission on a mid-intensity battlefield in support of an airborne division.

The investigation reveals that improved tactics and employment techniques will enhance mission accomplishment and survivability of the air cavalry squadron. It also confirms that developments to improve the mission capabilities of the air cavalry squadron in the airborne antiarmor defense are well within current technology.

354. DEFEATING SOVIET ARTILLERY, by Major Eddy Smith, USA, 96 pages.

In the past fifteen years Soviet ground forces have dramatically increased their conventional military power to the point where they have become the most heavily armed force in the world. The United States Army has responded to these increases in many respects, but significant gaps still remain. As in so many categories of conventional military power, the Soviet Army possesses a dramatic numerical superiority in artillery. This thesis examines the problems the United States Army artillery faces in defeating Soviet Army artillery in a non-nuclear environment. Examined in depth are each country's artillery weapons, organizations, and tactics, from both an overall perspective and in a European scenario.

The general conclusion of this study is that there are numerous solvable problems in the United States Army artillery system. These problems are identified and general recommendations are made in the areas of artillery weapons development, organization, and tactics.

355. CLOSE AIR SUPPORT - CAN IT SURVIVE THE 80S?, by Major Ross L. Smith, USAF, 119 pages.

This is a study of Close Air Support as it might be utilized on the modern battlefield in Central Europe. The study investigates the Close Air Support mission by examining how it applies to the US Army Active Defense doctrine, the Warsaw Pact ground and air threat, the 1973 Arab-Israeli War, and examines the current doctrine of Close Air Support in Army, Air Force, and NATO manuals.

The study reveals that the US Army places too much reliance on Close Air Support to supplement shortfalls in organic firepower, and that the massive use of Close Air Support required by the Active Defense is a poor use of air power.

The study recommends that Close Air Support, Battlefield Interdiction, and Interdiction be redefined in Air Force, Army, and NATO manuals.

The study further recommends that Close Air Support be limited to direct fire range of Army weapons and that the major air effort should be used against the second echelon forces before they reach the main battle area. Finally, the study graphically portrays the air-land battle with the Joint Air Attack Team used for Close Air Support and the target box concept used for high-performance aircraft against the second echelon.

356. REALISTIC TRAINING: THE KEY TO SUCCESS IN AERIAL COMBAT, by Major Walter L. Van Gilder, USAF, 93 pages.

Today's USAF air-to-air combat forces must be prepared to gain and maintain air superiority quickly with minimum losses. Considering the numerical superiority and rapidly advancing quality of the threat, this requirement places a high premium on a credible, realistic training program. This study reviews aspects of historical methods of air-to-air training and subsequent force employment. Then an assessment of some recent aerial combat training initiatives is made to evaluate their effectiveness in producing a combat ready air-to-air force. It concludes that much progress has been made, but that certain improvements are required to develop full combat potential.

357. WILL AGGRESSOR SQUADRONS BE NEEDED IN THE FUTURE?, by Major Barry K. Wood, USAF, 89 pages.

The U.S. Air Force's poor air combat results in Vietnam prompted more realistic training programs to improve our fighter pilots' air combat effectiveness. The establishment of dissimilar air combat training (DACT) conducted by a professional "aggressor" force has given Tactical Air Combat fighter pilots the hostile environment and realistic adversary that were lacking in a predominantly F-4 fighter force. This thesis examined the need for F-5E Aggressor Squadrons to perform this dissimilar air combat role now that the F-15 and F-16 fighter aircraft are in production. The evaluation of Aggressor Squadron operations encompassed both training and cost analyses. The training effectiveness was examined by analyzing Air Force and Navy air combat results in Southeast Asia with and without an Aggressor DACT program and projecting the outcome to a future conflict. The operating costs of the F-4, F-5E, F-15, and F-16 were investigated to determine the most economical vehicle to provide Aggressor training.

The general conclusion of this thesis is that the F-5E Aggressor Squadrons should continue as the focal point of enemy tactics, weapon systems and philosophy. Recommendations to improve air combat training and overall tactical force readiness are presented for consideration.

ABSTRACTS

OF

CLASSIFIED THESES

CATEGORICAL LIST OF CLASSIFIED SUBJECTS

AIR DEFENSE C39, C41

AIR FORCE C39, C41, C42

AIR SUPPORT C42

FORCE DEVELOPMENT C39, C41

HELICOPTERS C40

TACTICS C39, C40, C41

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C39. (S) The Advanced Remotely Piloted Vehicle (ARPV): A Cost and Operationally Effective Force Multiplier for Joint SEAD in the Second Echelon (U)---------- 26

C40. (C) Helicopter Recovery on the European Battlefield (U) ---------- 26

C41. (S) A Potential NATO Central Region Combat Multiplier: The C-130 Air Delivering Scatterable Mines (U) ---------- 27

C42. (S) Night Close Air Support Aircraft Requirements(U)---------- 27

C39. (S) THE ADVANCED REMOTELY PILOTED VEHICLE (ARPV): A COST AND OPERATIONALLY EFFECTIVE FORCE MULTIPLIER FOR JOINT SEAD IN THE SECOND ECHELON (U), by Major Thomas T. Cavanagh III, USAF, 138 pages.

(U) This thesis reviews and analyzes the large but diverse and fractionated data sources on strike, midi-sized RPVs and their employment in a high threat battle scenario as we could expect in the NATO arena of the 1980s. The resultant compilation and combination of data is updated to reflect current cost levels and compared to manned aircraft. The capabilities of an ARPV are evaluated relative to anticipated future defense requirements to determine an optimum mission application, if any.

(U) The research indicates that while aircraft and precision munitions costs have doubled and tripled in the last ten years, without concomitant increases in capability, ARPV cost estimates have only increased 50 percent. In addition, many of the technological obstacles to remote control, sensor suites, and real time data link security have been assured since the 1976 ARPV studies. Finally, among all of the potential uses of the ARPV, one mission stands out as the most cost effective role; one that goes a long way in closing a large gap in current joint force tactical planning, that is, SEAD.

(U) This thesis suggests improvements in conceptualization of a singular ARPV mission, lethal SEAD, so as to optimize the total force capability of the USAF and simultaneously answers some of the knotty problems currently plaguing the development of joint SEAD doctrine.

C40. (C) HELICOPTER RECOVERY ON THE EUROPEAN BATTLEFIELD, (U), by Major Boyd E. King, USA, 98 pages.

(U) This thesis examines the requirements for helicopter recovery on the mid-intensity battlefield in Europe. The examination focuses on the Combat Aviation Battalion of the Armored and Infantry (Mechanized) Division. The heavy division in Europe has 170 organic helicopters which will be employed in the division sector. Methods of locating, repairing or recovering helicopters forced down by battle damage or maintenance difficulties are investigated.

(U) The data developed, using a computer driven wargame as the vehicle to generate losses, suggest that the heavy division, as presently organized, does not have the personnel or equipment to effectively recover the assigned helicopters which may reasonably be expected to be downed during mid-intensity defensive battles. Alternative doctrine and organizations are recommended which will allow the heavy division to plan for and execute battlefield recovery of organic helicopters.

C41. (S) A POTENTIAL NATO CENTRAL REGION COMBAT MULTIPLIER: THE C-130 AIR DELIVERING SCATTERABLE MINES, (U), by Major John M. Vickery, USAF, 123 pages.

(U) This study considers the requirement for and value of extensive, rapidly emplaced minefields in the defense of the NATO Central Region against the current Warsaw Pact armored and mechanized threat. The study focuses on the factors of: suitability of the terrain in the NATO Central Region for using minefields to slow or stop attacking Warsaw Pact forces; current and evolving capability of United States, German and British forces to emplace land mines in the NATO Central Region; estimated minefield requirements for the initial covering force and main battle area of each of the NATO Central Region Corps areas; characteristics of the required NATO Central Region minefields in terms of optimized minefield densities, expected time available to emplace the minefields, and the mobility, firepower or catastrophic kill stopping power of selected conventional and scatterable mining systems; and, the potential of C-130 tactical transports to emplace in selected situations numerous or large minefields accurately, effectively and responsively.

(U) This study reveals the significant potential of the C-130 to air deliver scatterable mines and the value of this capability in improving the defensive capability of NATO Central Region forces. It further reveals the magnitude of NATO Central Region defensive minefield requirements.

C42. (S) NIGHT CLOSE AIR SUPPORT AIRCRAFT REQUIREMENTS, (U), by Major Harvey D. Wier, Jr. USAF, 51 pages.

(U) This study deals with the requirements an aircraft must have to successfully accomplish the night close air support mission in a mid-intensity conflict. Night specific requirements that are required to attack and destroy a highly armored enemy ground force are discussed.

(U) The study identifies current technology that can be adapted to an aircraft to accomplish the mission.

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